

# METHODOLOGY AND SPECIFICATIONS GUIDE

## Iron Ore

(Latest update: May 2015)

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## INTRODUCTION

Platts' methodologies are designed to produce price assessments that are representative of market value, and of the particular markets to which they relate. Methodology documents describe the specifications for various products reflected by Platts' assessments and indexes, the processes and standards Platts adheres to in collecting data, and the methods by which Platts arrives at final assessment values for publication. These guides are freely available on Platts' website for public review.

Platts discloses publicly the days of publication for its price assessments and indexes, and the times during each trading day in which Platts considers transactions in determining its assessments and index levels. This schedule of publication is available in Platts methodology guides. Where this schedule is disrupted by public holidays; a schedule of services/publications affected is available at the following link: <http://www.platts.com/HolidayHome>.

The dates of publication and the assessment periods are subject to change in the event of outside circumstances that affect Platts' ability to adhere to its normal publication schedule. Such circumstances include network outages, power failures, acts of terrorism and other situations that result in an interruption in Platts' operations at one or more of its worldwide offices. In the event that any such circumstance occurs, Platts will endeavor, whenever feasible, to communicate publicly any changes to its publication schedule and assessment periods, with as much advance notice as possible.

All Platts methodologies reflect Platts' commitment to maintaining best practices in price reporting.

Platts' methodologies have evolved to reflect changing market conditions through time, and will continue to evolve as markets change. A revision history, a cumulative summary of changes to this and future updates, is included at the end of the methodology.

## HOW THIS METHODOLOGY STATEMENT IS ORGANIZED

This description of methodology for indexes and assessments is divided into seven major parts (I-VII) that parallel the entire process of producing the end-of-day price values.

- Part I describes what goes into Platts indexes and price values, including details on what data market participants are expected to submit, the process for submitting data and criteria for timeliness of market data submissions.
- Part II describes any security and confidentiality practices that Platts uses in handling and treating data, including the separation between Platts price reporting and its news reporting.
- Part III is a detailed account of how Platts collects bids, offers, trades and other market data, and what Platts does with the data to formulate its indexes and assessments. It includes descriptions of the methods that Platts uses for reviewing data, and the methods used to convert raw data into indexes and assessments, including the procedures used to identify anomalous data. This section describes how and when judgment is applied in this process, the basis upon which transaction data may be excluded from a price assessment, and the relative importance assigned to each criterion used in forming the price assessment. This section describes the minimum amount of transaction data required for a particular price assessment to be published, and the criteria for determining which values are indexes, and which are assessments, based on reported transactions and other market information. Finally, this section describes how Platts addresses assessment periods where one or more reporting entities submit market data that constitute a significant proportion of the total data upon which the assessment is based.
- Part IV explains the process for verifying that published prices comply with Platts' standards.
- Part V lays out the verification and correction process for revising published prices and the criteria Platts uses to determine when it publishes a correction.
- Part VI explains how users of Platts assessments and indexes can contact Platts for clarification of data that has been published, or to register a complaint. It also describes how to find out more about Platts' complaint policies.
- Part VII is a list of detailed specifications for the trading locations and products for which Platts publishes indexes or assessments in this commodity. This section describes why specific units of

measurement are used, and what conversion factors are used to move between units of measurement, where relevant.

## PART I: DATA QUALITY AND DATA SUBMISSION

Platts' objective is to ensure that the submission of transactional information and other data inputs that editors use as the basis for their price assessments is of the highest quality. Ensuring that data used in Platts assessments is of high quality is crucial to maintaining the integrity of Platts' various price assessment processes.

Platts encourages entities that submit any market data for consideration in its assessment processes to submit all market data that they have which may be relevant to the assessment being made. Platts' aim is to determine the full circumstances surrounding all reported transactional data, including details of quality, specifications, order sizes, dimensions, lead times and any locational and loading/delivery information. Platts uses that information to determine a typical and repeatable market level for the commodity being assessed.

Platts routinely, and as part of standard editorial practice, reviews the companies participating in its price assessment processes. These reviews ensure the suitability of data and information that are used to formulate Platts' end-of-day price assessments. These reviews are conducted on a regular basis, and may take into consideration an array of issues including, but not limited to, adherence to editorial guidelines, operational and logistical issues, as well as counterparty acceptance.

The reviews are not designed to impede a company's ability to bilaterally engage in market transactions; the objective at all times is to ensure the integrity of published price assessments. Platts does not disclose the nature or scope of routine reviews of data providers that participate in its price assessment activities.

## WHAT TO REPORT

- Confirmed trades
- Firm bids that are open to the marketplace as a whole, with standard terms
- Firm offers that are open to the marketplace as a whole, with standard terms
- Expressions of interest to trade with published bids and offers, with standard terms
- Indicative values, clearly described as such
- Reported transactional activity heard across the market, clearly described as such
- Other data that may be relevant to Platts assessments, such as supply/demand fundamentals and other factors affecting the price of a particular commodity

## HOW TO REPORT

Platts accepts information provided for publication in real-time across a wide variety of media. The following reporting methods are accepted by Platts' editorial staff:

- Commonly used Instant Messaging software
- eWindow
- Telephone
- Email
- Fax

## MOC DATA PUBLISHING PRINCIPLES

Platts has progressively adopted its Market on Close (MOC) assessment process to assess the value of iron ore. The MOC assessment process establishes core standards for how data is collected and published, how data is prioritized by value, and ultimately how data is analyzed in the course of completing Platts assessments.

Transparency underpins Platts data publishing processes in markets. Under Platts MOC guidelines for collecting and publishing data, Platts publishes market information including but not limited to firm bids and offers from named companies, expressions of interest to trade and confirmed trades that are received from market participants throughout the day.

This information is published in real-time, as it is received, on Platts information service, Platts Metals Alert and IO eWindow. Platts publishes all information received so that it can be fully tested by the market at large. Information collected and published may include the identities of buyers and sellers, confirmed prices, volumes, location, and stated trading terms.

Platts assessments are designed to reflect repeatable market value at the close of the assessment process. Platts tracks market price evolution during the entire day, and publishes a wide range of data relating to market value as it does so. All data that has been published through the day is analyzed during the assessment process. Towards the close of the day, Platts focuses its assessment process seeking to publish named firm bids and offers, expressions of interest to trade and confirmed trades, with all relevant details. Transparent data is prioritized in the assessment process, because it is available to the entire market for testing.

Platts applies a survey assessment methodology where market conditions do not support an MOC assessment environment. Platts collects a wide variety of transactional and market information through a survey of participants, which typically includes communicating with sources via phone, email, and instant messaging, among other communication methods. Although the survey assessment methodology is in many respects similar to the MOC assessment methodology there are key distinctions between the assessment approaches.

In such environments, Platts collects as much data as possible, including

bids, offers, interest to trade, transactions that have been previously concluded, and indications of value from participants in the market. Platts seeks to collect, confirm and analyse as much information as possible in survey markets, and encourages market participants to provide all relevant information. Platts publishes credible information collected that meets our methodological standards, typically through real-time information services and with as much transparency as possible. This information is considered when determining and completing a final assessment.

All Platts market reporters are trained to analyse the data they receive and to question sources to establish the fullest set of information possible around price data. Reporters are trained to seek a wide variety of information to test reported transactional activity, including the specific price agreed, the counterparty to the trade, the point of origin and destination for delivery of the commodity, the size of the transaction, any physical quality commitments agreed as part of the trade, the terms and conditions of a trade and when a trade was agreed.

Survey and MOC environments are linked. Survey assessment environments are a common ground for future MOC assessment environments, and Platts regularly reviews its survey environments to determine which may be suited to an MOC approach. Similarly, MOC environments are underpinned by data collected by surveying sources throughout the day, to ensure that Platts is aware of market values as the MOC process begins, and so that Platts has data to review when considering information collected through MOC, particularly if an MOC environment yields little or no data on a given day.

For analysis of the data, Platts survey methodologies will typically give priority to data collected that is confirmed and published, and which is most relevant to closing values in the markets covered.

In order to enable firm bids and firm offers that still stand at the close of the assessment process have been fully tested in the market at large, Platts launched an editorial window (eWindow) in March 2013, which has clearly defined time cut-offs that apply when publishing firm bids and firm offers in the MOC process. Time cut-offs for the submission and subsequent publication of new bids and offers are applied so that MOC participants cannot bid or offer late in the process, and to ensure that every bid and offer published by Platts is logistically executable.

Bids and offers published by Platts are considered to be firm until Platts is informed otherwise, or until the close of the assessment process for the day, whichever comes first. Platts will consider all firm bids and offers as open to the market at large and executable unless informed otherwise by the counterparty submitting the market information. If no communication is made to Platts to withdraw or change the parameters of the bid or offer it is assumed that it is available to the marketplace. Platts seeks verification of any transaction originating from a bid or offer submitted for inclusion in the Platts MOC process.

Platts editorial guidelines governing its assessment process require it must consider only those transactions, bids or offers where market participants perform under typical contractual terms. Platts accepts that individual companies may have trading limits with counterparties and that national legislation may prevent companies from dealing in materials of certain origins. Such counterparty issues are dealt with on a case-by-case basis. Platts tracks all circumstances surrounding trades reported during its MOC assessment process, and any issues regarding performance. Platts not only focuses on the performance of the transaction at the time of trade, but also on any significant issues stemming from such trades, including logistics and eventual delivery of the product. Post-deal tracking can enable Platts to determine the actual performance of the participants in the trade and the validity of their inputs. Platts therefore may request documentary material to determine performance and validity.

Platts cannot make any guarantee in advance about how and whether market information received and published but not fully adhering to its defined methodology will be incorporated in its final assessments.

## PART II: SECURITY AND CONFIDENTIALITY

Data is stored in a secure network, in accordance with Platts' policies and procedures. Platts iron ore assessments are produced in accordance with Platts' Market on Close assessment methodology. This means that all data for use in Platts iron ore assessments may be published by Platts editorial staff while assessing the value of the markets.

Platts does not have confidentiality agreements for information provided for use in iron ore assessments.

## PART III: CALCULATING INDEXES AND MAKING ASSESSMENTS

The following section describes how Platts uses the specific volume, concluded and reported transactions, bids, offers and any other market information it has collected, in the manner described in section one, to formulate its price assessments. Additionally, this section describes other information, including the normalization of market data, assumptions and extrapolations that are considered when making a final assessment.

### MOC PRICE ASSESSMENT PRINCIPLES

As a publisher owned by McGraw Hill Financial, Platts places independence and impartiality at the heart of its price assessments. Platts has no financial interest in the price of the products or commodities on which it reports. Platts' overall objective is to reflect the transactable value of the commodity assessed. Platts' indices and assessments are based on its own surveys of market participants completed by Platts market reporters each day. Platts assessments are based on as broad a cross-section of the market as possible, including distributors, traders, producers, end-users and brokers.

All transactional data is factored equally for use in a particular assessment, as long as such transactions are deemed repeatable and within the established specifications for each product. Transactions are not evaluated on a weighted basis.

Through the MOC assessment process, Platts considers market information gathered throughout the normal trading day, and publishes such information throughout the day. Platts analyzes all published information in determining its final published price assessments.

Through the progressive adoption of the MOC assessment process, Platts seeks to establish and publish the value of iron ore that prevails at the close of the assessment process itself. Platts has aligned the timestamps reflected in its assessments with what typically is a period of high activity in the markets that Platts observes. The typical period of high activity in iron ore markets tends to be in the afternoon in every major trading location around the world. Platts believes that aligning its price assessments to typical periods of greater market activity and liquidity

provides a robust basis upon which to derive a reliable assessment of market value.

### Iron ore assessment timestamp

Asia: 5:30 pm Singapore

Platts is progressively adopting MOC methodology in order to provide complete clarity over the precise point in time reflected in its market assessments. Like the quality of iron ore, its delivery location, delivery dates, contract terms, and the volume to be supplied, the time of commercial activity is an important attribute considered in Platts price assessments. The time that a bid or offer is shown to the market, or a transaction concluded, is vitally important in understanding the market value of the respective commodity, in the same way that the quality of the iron ore, where it will be delivered and when it will be delivered are important factors. By clearly reflecting value at a defined point in time Platts would be able to properly reflect outright and spread values.

MOC guidelines are designed to avoid distortion of the final price assessments by eliminating inputs that are not fully verifiable, and by disregarding one-offs or unrepeatable transactions, or those that may distort the true market level. Transactions between related parties are, for instance, not considered in the assessment process.

Platts does not specify a minimum amount of transaction data, or a transaction data threshold, for the publication of its price assessments. Physical commodity markets vary in liquidity. Any particular market analyzed on its own will typically demonstrate rising and falling levels of transactional activity through time. Platts is committed to providing an assessment of value for every market that it covers, equally well in times of heightened or reduced liquidity.

Platts seeks to receive market information from as broad a cross section of the market as possible. If a very limited number of market-makers are active in the market, or if a limited number submit data that constitutes a significant proportion of the total data upon which the assessment is based, Platts will continue to seek fully transparent and verifiable data from the market at large and to apply Platts methodology principles of transparency, repeatability and time sensitivity. Platts considers data for assessment of any market where a single company provides more

than half of all available information to be one where such a company provides a significant proportion of data. For consideration in the assessment process Platts will seek to verify that the value reflects broad market value.

### NORMALIZATION PRICE ADJUSTMENT TECHNIQUES

Platts seeks to align the standard specifications for the iron ore markets it assesses and the timestamps reflected in its assessments with standard industry practice. However, physical commodity markets are generally heterogeneous in nature – not only can time of transactional activity considered for inclusion in the price assessment process vary through the day, other key attributes often vary from the base standard reflected in Platts assessments for iron ore traded in the market.

The quality of iron ore, delivery location, and other specific terms of trade may be varied in the physical commodity markets assessed by Platts. This is one reason among many why data collected from these markets may not be simply averaged to produce a representative value.

Because of the complex nature of the physical markets, data typically must be aligned with standard definitions to allow for a fully representative final published assessment. Platts aligns data collected through an analysis of the physical iron ore markets with its standard assessment specifications through a process called normalization.

Normalization is an essential price adjustment technique applied by Platts, to align reported market information to reflect the economic relationship between specific reported activity and the base standard reflected in Platts price assessments.

By surveying markets and observing the economic impact of variance from the base standard reflected in Platts assessments, Platts regularly normalizes disparate information from the diverse physical commodity markets back to the standard reflected in Platts price assessments. This is done by analyzing freight rates (for locational differences), quality differentials (for quality differences), the movements of all markets through time (for time differences) and other differentials associated with the size of trades and delivery terms.

Normalization for time may be done by analyzing movement in a related market observed through time, and that movement may provide a basis by which to align market value of an earlier reported bid, offer or transaction to market value at the MOC close. This alignment for time is essential to ensure that Platts price assessments reflect the prevailing value of a market at the close of the MOC process.

### PRIORITIZING DATA

Platts' assessment process considers firm bids, firm offers and transactions that are transparent and open to any counterparty with the proper financial and operational resources. Bids, offers or transactions that are not transparent may not be considered in the assessment process. Data from transactional activity occurring in eWindows, adhering to our published methodology, would be considered of the highest quality for assessment purposes.

The level of each bid or offer should stand firm in the marketplace long enough for any counterparty to hit the bid or lift the offer, otherwise the bid or offer may be deemed non-executable. Platts may not consider bids, offers or transactions that are the result of market gapping, i.e. changes that are in excess of normal market practice.

Transparency underpins Platts assessment process, just as it does Platts data publishing processes, in the iron ore markets. When determining a final market assessment, Platts gives the greatest priority to fully verifiable and transparent market information. A firm bid or offer that has been published by Platts in accord with its data publishing standards, and which still stands open to the marketplace at the close of the assessment process, will establish clear parameters for Platts final published assessments. Platts will typically assess market value somewhere between the best bid, and best offer, open to the market at the close of the MOC process. This ensures that Platts assessments reflect the transactable value of the commodities it is assessing at the close of the market.

Completed, transparent transactions that are fully published by Platts are important in helping establish where trading interest prevails in the market, and may help determine where, in a bid/offer spread, Platts may assess value for publication.

Firm bids and offers that are available to the entire market take precedence over trades that have been concluded earlier in the assessment process when establishing the value of the market, particularly if bids are available at the close above previously traded levels, or offers are available to the market below previously traded levels. Value is a function of time.

Similarly, firms bids and offers that are available to the entire market take precedence over transactional activity reported to Platts after the fact.

When no bid, offer or transaction data exists, Platts may consider other verifiable data reported and published through the day, including fully and partially confirmed trades, notional trading values and other market information as provided for publication. Under such circumstances, Platts may also be able to observe direct market activity or the effect of commonly traded commodities on illiquid markets via spread differentials and/or shipping economics.

Platts also analyzes the relationships between different products, and factors these relationships into assessments for markets where transactional data falls to low levels. Finally, Platts normalizes other available data that may be relevant to the assessment during periods when low amounts or no transactional data exists, including transactional data from related markets, in the manner described above.

Platts MOC guidelines are designed to avoid any distortion of the final price assessment and so inputs that are not verifiable tend to be eliminated and "one-off" or unrepeatable transaction data may be disregarded from the price assessment process.

Single transactions may be a reflection of market value. However, single transactions need to be measured against the broad span of similar transactions. Platts seeks to verify the repeatability of market value by determining the level achieved is repeatable in the wider market.

A variant on this action is price "gapping" when bids are made too high and offers are made too low through untested levels of price support or resistance. Platts may not publish such bids and offers during the MOC process. When transactions are concluded at levels that have not been fully tested by the market because price changes have been non incremental, Platts may determine that actual market value is somewhere between the last incremental bid and the transaction at the gapped level.

## ASSESSMENT CALCULATIONS

Platts publishes its assessments reflecting the currencies and units of measurement in which the products typically trade.

In certain cases Platts converts its assessments to other currencies or units of measurement to allow for ease of comparison or analysis in regional markets. Such conversions are done using published exchange rates and conversion factors.

Platts reporters follow specific methodology when exercising editorial judgment during their assessment process. Platts editors apply judgment when determining (1) whether information is suitable for publication, (2) when normalizing data and (3) when determining where to assess final value of market.

Judgment may be applied when analyzing transactional data to determine if it meets Platts standards for publication; judgment may also be applied when normalizing values to reflect differences in time, location, and other trading terms when comparing transactional data to the base standard reflected in Platts assessments.

All such judgment is subject to review by Platts editorial management for adherence to the standards published in Platts methodologies. The following section illustrates how these guidelines work when calculating indexes and making assessments.

To ensure the assessments are as robust as possible, Platts editorial systems are backed by a strong corporate structure that includes managerial and compliance oversight. To ensure reporters follow Platts methodological guidelines in a consistent manner, Platts ensures that reporters are trained and regularly assessed in their own and each other's markets.

Application of professional judgment guidelines promotes consistency and transparency in judgments and is systematically applied by Platts. Where professional judgment is exercised, all information available is critically analysed and synthesised. The various possibilities are critically analysed and fully evaluated to reach a judgment. Platts manages and maintains internal training guides for each of the different products assessed which aim to assist assessors and ensure Platts' price assessments are produced consistently. Platts' price assessments are reviewed prior to

publication and exercise of professional judgment is further discussed and verified during this process. Finally, consistent with the concept of proportionality, assessments that are referenced by derivatives contracts are supported by assessment rational, including the application of judgment, which is published together with the price assessment offering full transparency to the market.

Reporters are trained to identify potentially anomalous data. We define anomalous data as any information, including transactions, which is inconsistent with or deviates from our methodology or standard market conventions

Platts focuses primarily on assessing the value of iron ore trading in the seaborne spot market. A spot price for a physical commodity is the value at which a standard, repeatable transaction for merchantable material takes place, or could take place in the open market at arms' length. In iron ore, Platts' spot price assessments reflect the value at which transactions take place, or could take place, at precisely the close of the MOC process.

Platts' overall objective is to reflect the transactable value of the commodity assessed. In cases where the apparent value of the commodity includes extra optionalities, the intrinsic value of the commodity may be masked. In such cases, Platts may use its editorial judgment to factor out such extraneous elements from the value of the commodity, or it may decide not to use the bid, offer or transaction in its assessment process. Optionalities that may mask the value of the commodity include but are not limited to loading or delivery options held by the buyer or seller, volume option tolerances exercisable by the buyer or seller or quality specifications.

## PART IV: PLATTS EDITORIAL STANDARDS

All Platts employees must adhere to the McGraw Hill Financial Code of Business Ethics (COBE), which has to be signed annually. The COBE reflects McGraw Hill Financial's commitment to integrity, honesty and acting in good faith in all its dealings.

In addition, Platts requires that all employees attest annually that they do not have any personal relationships or personal financial interests that may influence or be perceived to influence or interfere with their ability to perform their jobs in an objective, impartial and effective manner.

Market reporters and editors are required to ensure adherence to published methodologies as well as internal standards that require accurate records are kept in order to document their work.

Platts has a Quality & Risk Management (QRM) function that is independent of the editorial group. QRM is responsible for ensuring the quality and adherence to Platts' policies, standards, processes and procedures. The QRM team conducts regular assessments of editorial operations, including checks for adherence to published methodologies.

McGraw Hill Financial's internal auditor, an independent group that reports directly to the parent company's board of directors, reviews the Platts risk assessment programs.

## PART V: CORRECTIONS

Platts is committed to promptly correcting any material errors. When corrections are made, they are limited to corrections to data that was available when the index or assessment was calculated.

## PART VI: REQUESTS FOR CLARIFICATIONS OF DATA AND COMPLAINTS

Platts strives to provide critical information of the highest standards, to facilitate greater transparency and efficiency in physical commodity markets.

Platts customers raise questions about its methodologies and the approach taken in price assessments, proposed methodology changes and other editorial decisions in relation to Platts' price assessments. Platts strongly values these interactions and encourages dialogue concerning any questions a customer or market stakeholder may have.

However, Platts recognizes that occasionally customers may not be satisfied with responses received or the services provided by Platts and wish to escalate matters. Full information about how to contact Platts to request clarification around an assessment, or make a complaint, is available on the Platts website, at: <http://www.platts.com/ContactUs/Complaints>.

## PART VII: DEFINITIONS OF THE TRADING LOCATIONS FOR WHICH PLATTS PUBLISHES INDEXES OR ASSESSMENTS

The following Iron Ore specifications guide contains the primary specifications and methodologies for Platts Iron Ore assessments throughout the world. The various components of this guide are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification issues.

This methodology is current at the time of publication. Platts may issue further updates and enhancements to this methodology and will announce these to subscribers through its usual publications of record. Such updates will be included in the next version of the methodology. Platts editorial staff and managers will usually be ready to provide guidance when assessment issues require clarification.

### IRON ORE ASSESSMENTS

Assessment	CODE	Mavg	Wavg	Rolling Mavg	QUALITY	QUANTITY	DIMENSIONS	LOCATION	TIMING	PAYMENT TERMS	UOM
IODEX 62% FE CFR China	IODBZ00	IODBZ03	IODBZ02	IODBZ04	62% Fe, 8% moisture, 4.5% silica, 2% alumina, 0.075% phosphorus, 0.02% sulfur	min. 35,000 mt	Granular size of up to 10 mm for up to 90% of cargo	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton
IO Fines 63.5/63% FE CFR China	IODSC00	IODSC03			63.5/63% Fe, 8% moisture, 3.5% silica, 3.5% alumina, 0.075% phosphorus	min. 35,000 mt	Granular size of up to 10 mm for up to 90% of cargo	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton
IO Fines 65% FE CFR China	IOPRM00	IOPRM03			65% Fe, 4% moisture, 3.5% silica, 1% alumina, 0.075% phosphorus	min. 35,000 mt	Granular size of up to 10 mm for up to 90% of cargo	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton
IO Fines FE 58% Low Alumina CFR China	IONC580	IONC583			58% Fe, 9% moisture, 9.5% loss on ignition, 5.5% silica, 1.5% alumina, 0.05% phosphorus, 0.02% sulfur	min. 35,000 mt	Granular size of up to 10 mm for up to 90% of cargo	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton
IO Fines FE 58% CFR China	IODFE00	IODFE03			58% Fe, 10% moisture, 5% silica, 4% alumina, 0.05% phosphorus	min. 35,000 mt	Granular size of up to 10 mm for up to 90% of cargo	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton
IO Fines FE 52% CFR China	IONC520	IONC523			52% Fe, 14% moisture, 8% silica, 8% alumina, 0.06% phosphorus	min. 35,000 mt	Granular size of up to 10 mm for up to 90% of cargo	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton
IO Spot Lump Premium 62.5% CFR China (Weekly)	IOCLP00	IOCLP03			62.5% Fe, 4% moisture, 3.5% silica, 1.5% alumina, 0.075% phosphorus, 0.02% sulfur	min. 50,000 mt	Sizing of max 15% <6.3 mm and max 15% >31.5 mm	CFR main Chinese ports, normalized to Qingdao	Delivery within 2-8 weeks from publication date	L/C at sight	USD/dry metric ton unit
IO Australia Lump Premium Contract Price CFR China (Qtrly)	IOPLC00				Approximates that of commonly traded Australian brands like Pilbara Blend, Newman Blend Lump	NA (volumes differ by term contract)	Not specified but implied to be reflective of brands mentioned in F11	Not specified	Not specified but implied to be delivery within quarter	NA	USD/dry metric ton unit
Iron ore Alumina differential per 1% with 1-2.5% \$/DMT	IOADF10				1% alumina within 1-2.5% range	NA (this is a differential of a particular impurity within a cargo)	NA	NA	NA	NA	USD/dry metric ton
Mid Range 1% Fe Diff 60-63.5 Fe \$/DMT	IOMGD00	IOMGD03			1% Fe within 63-63.5% range	NA (this is a differential of a particular element within a cargo)	NA	NA	NA	NA	USD/dry metric ton
Iron ore Silica differential per 1% with 4.5-6.5% \$/DMT	IOPPS10				1% silica within 4.5-6.5% range for Fe grades 60-63.5% Fe	NA (this is a differential of a particular impurity within a cargo)	NA	NA	NA	NA	USD/dry metric ton
Iron ore Silica differential per 1% with 6.5-9% \$/DMT	IOPPS20				1% silica within 6.5-9% range for Fe grades 60-63.5% Fe	NA (this is a differential of a particular impurity within a cargo)	NA	NA	NA	NA	USD/dry metric ton
Iron ore Phosphorus differential per 0.01% with 0.09-0.12% \$/DMT	IOPPQ00				0.01% phosphorus within 0.09-0.12% range for Fe grades 60-63.5% Fe	NA (this is a differential of a particular impurity within a cargo)	NA	NA	NA	NA	USD/dry metric ton
Iron Ore Cnctrt 66% Fe Dry China Dom Prod Dlv Tangshan Hebei Incl 17%Vat MAvg	SBMAJ03				66% Fe, 8% moisture, 5% silica, 0.75% alumina, max 0.03% phosphorus, max 0.05% sulfur	min. 1,000 mt	Granular size of more than 0.074 mm for at least 70% of cargo	Delivered to mill in Tangshan, Hebei	Delivery within 2 weeks from publication date	Cash at sight	CNY/dry metric ton (incl. VAT)



## IRON ORE ASSESSMENTS CONTINUED

Assessment	CODE	Mavg	Wavg	Rolling Mavg	QUALITY	QUANTITY	DIMENSIONS	LOCATION	TIMING	PAYMENT TERMS	UOM
Iron Ore Cnctrtrt 66% Fe Dry China Dom Prod Dlv Tangshan Hebei Incl 17% Vat Wkly	SB01159				66% Fe, 8% moisture, 5% silica, 0.75% alumina, max 0.03% phosphorus, max 0.05% sulfur	min. 1,000 mt	Granular size of more than 0.074 mm for at least 70% of cargo	Delivered to mill in Tangshan, Hebei	Delivery within 2 weeks from publication date	Cash at sight	CNY/dry metric ton (incl. VAT)
Atlantic basin Iron Ore Pellets FOB Basis	SB01095				65% Fe premium quality Brazilian blast furnace pellet (specifications may be further defined)						USD/dry metric ton

## IRON ORE ASSESSMENTS

**IOMGD00 1% Fe Differential (Range 60-63.5 Fe)**

Platts 1% Fe differential is reflective of the value of 1% Fe in fines within the 60-63.5% Fe range. Its value is determined by comparing spot transactions of fines within the 60-63.5% Fe. This per Fe value is assessed daily at Asian market close, and expressed in USD per dry metric ton.

**Per 1% Alumina and Silica Differentials, per 0.01% Phosphorus Differential (Range 60-63.5 Fe)**

IOADF10 Iron Ore Alumina Differential per 1% within 1-2.5% range

IOPPS10 Iron Ore Silica Differential per 1% within 4.5-6.5% range

IOPPS20 Iron Ore Silica Differential per 1% within 6.5-9% range

IOPPQ00 Iron Ore Phosphorus Differential per 0.01% within 0.09-0.12% range

Platts alumina and silica differentials are reflective of the 1% value within specific bands of alumina and silica as stated above, for which they are deemed to be linear. These values are determined by comparing the alumina and silica values of spot trades of 60-63.5% Fe cargoes. Values are also determined from feedback from industry sources buying or selling 60-63.5% Fe cargoes with differing alumina and silica impurities. Additionally any flat price discounts or premiums to IODEX or 60-63.5% Fe trades can also be used to establish these values.

The Platts phosphorus differential is reflective of the incremental value of 0.01% within the 0.09-0.12% range contained in a specification of iron ore fines. The value is determined from market sources buying or selling iron ore fines 60-63.5% Fe cargoes with differing phosphorus impurities, as well as an analysis of flat price discounts or premiums to IODEX or 60-63.5% Fe trades. Currently, Platts understands there is no value adjustment for phosphorus levels below 0.09% for 60-63.5% Fe cargoes, with most liquid mainstream products for this Fe range typically containing 0.06-0.09% phosphorus levels. However, if there are particular shipments of liquid 60-63.5% Fe cargoes that are delivered with phosphorus levels exceeding the 0.09% level, such spot trades can be directly compared to determine the value of this differential.

**Normalization for quality**

Platts defines base specifications for which deals, bids and offers are normalized to. Quality normalization involves adjusting for differences in chemical, physical and metallurgical properties, with the latter two especially critical in lump and pellet valuation.

In normalizing for chemical quality, the most important factors Platts reflects are iron, alumina and silica. Platts normalizes for differences in iron content by adjusting on an iron unit basis, when the alumina and silica contents of an observed product approximate those underlying the Platts assessments. For example, a cargo with specifications of 61%-Fe, 1.9% alumina and 2.7% silica will be normalized by dividing its price (transacted, bid or offered) by 61 and then multiplying the result by 62 for normalization to IODEX specifications, and in accordance with industry practice. Additional adjustments will be made for alumina and silica to reflect the underlying Platts assessments.

Ores of grades below 60% Fe and above 63.5% Fe may not be used directly in the formation of the 62% Fe IODEX due to a lack of linearity in

the price escalation/de-escalation on a per Fe basis outside this range. They may however be referred to as an indicator of general price direction.

Where gangue contents differ from the underlying assessment specifications, Platts may use the published 1%-Fe differential (IOMGD00) in its normalization process. For example, for a cargo with 63%-Fe, 1% alumina and 6% silica, it would be normalized first by adjustment using the 1%-Fe differential, and then an additional adjustment using the 1% silica differential for the 4.5-6.5% range, and 1% Alumina differential for the 1-2.5% range.

Other impurities like phosphorus, sulfur, alkalis and loss on ignition (LOI) are also considered in the normalization process where known to have significant impact on value.

**Timing and time gradient**

The delivery time of cargoes can also impact its price. Platts normalize trades, bids and offers occurring between 2 to 8 weeks (14-56 days) forward from the date of publication, so that one-off or distressed trades where either the buyer or seller has left it too late to transact within acceptable lead times that can typically be met by counterparties in the normal course of business.

Platts assess to the middle of the 2 to 8 week delivery period. Backwardation and contango is factored into all assessments. The assessments thus reflect the value after taking into consideration the difference in prices prevailing along the time curve assessed by Platts.

The variability in price increases as the backwardation or contango in the markets increase in gradient. By normalizing prices to the mid-point of a clearly defined date range, the consistency of prices is maintained. The



day-to-day changes in the price assessments therefore reflect an actual price move in the value of the commodity, rather than an artificial change because a cargo happens to be loading/delivering in the front end of the window rather than the back end, or vice versa.

In a contango market, the excess of prompt material causes the front end to be significantly cheaper than material available at the end of the window. In a backwardated market the tightness of supply causes the prompter volumes to be at a higher price than iron ore available at the end of the window. Platts methodology eliminates any arbitrary movement in assessments caused simply by the different loading/delivery ranges traded.

Platts assessments seek to be inclusive of the various types and time frames of trade within markets. Any transaction that is negotiated as part of a framework of longer-term contractual arrangements (term deals) will be excluded from the assessment process.

#### **IOCPL00 IO Spot Lump Premium 62.5% CFR CHINA (Weekly)**

The assessment is of the premium the lump commands over the price of fines as defined by the Platts 62%-Fe Iron Ore Index. Market information obtained on a flat price basis will be converted to a premium on a dmtu basis.

Metallurgical properties have not been specified in line with current spot trading convention, as tests are not typically conducted on each cargo, whether at load or discharge port. Market participants evaluate

the premium each brand commands, incorporating chemical, physical and metallurgical properties, in large part based on prior knowledge of these properties and experience using the products.

#### **IOPLC00 IO Australia Lump Premium Contract Price CFR CHINA (Quarterly)**

This price was initially published March 15, 2013, and represents lump contract price premiums agreed between suppliers and Chinese steelmakers for Australian lump. The lump premium is updated each calendar quarter, in line with the frequency of most existing agreements between producers and consumers. The premium will be published on a dollar/dry metric ton unit basis, and will represent the most commonly traded brands like Pilbara Blend, Mining Area C and Newman lump.

Lump premiums vary from company to company, depending on when agreements are reached, brands, volumes, and whether they are negotiated as a package with other products like fines.

The published lump premiums represent what Platts understands most Chinese mills have agreed to. Premiums that are settled under known, special circumstances, would be reported about in news articles, but would be excluded from the published premium levels.

The contract price premium is published in a range. For example, for January-March 2013, the range was \$0.115-0.116/dmtu, as per a Platts December 21, 2012, news report on the matter. Lower contract price premiums of \$0.10-0.110/dmtu were reportedly obtained by one buyer,

but they were not reflected as they may not be representative of prices reached in the broader market.

#### **SB01095 Atlantic Basin Iron Ore Pellets FOB Basis (cent/dmtu) (Monthly)**

This monthly calculated value <SB01095> reflects a provisional contract settlement price for iron ore blast furnace pellets typically sold in term contracts, to steel mills primarily in Europe. It is published on the first business day of each month and then throughout that month in Steel Markets Daily and accessible on the SBB price analyzer. The calculated formula for the assessment takes the monthly average netback to Brazil <IONBB03> of the previous month, as its pricing basis. The quality is adjusted to 65% Fe, as a basis for pellet pricing, by adding (x3) 1% Fe differential monthly average <IOMGD03> also for the previous month. Additionally each month Platts editors assess a pellet premium in US\$, reflecting an additional charge, over the quality adjusted iron ore fines. A cent/ferrous unit price is calculated by dividing the sum value by 65.

#### **IOBFP00 Atlantic Basin iron ore pellet premium (\$US/dry mt) (monthly)**

This is a monthly assessed value for the pellet premium used in formulating a provisional contract settlement price (SB 01095) for iron ore blast furnace pellets typically sold in term contracts, to steel mills primarily in Europe., This value reflects an additional charge, over the quality adjusted iron ore fines.

## IRON ORE PAPER SWAPS

Assessment	CODE	Mavg	Wavg	QUALITY	QUANTITY	DIMENSIONS	LOCATION	TIMING	PAYMENT TERMS	UOM
IODEX ppr swaps Mo 1 \$/DMt	AAQTM00	AAQTM03		Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	First month after month of prevailing assessment date	Not specified	USD/dry metric ton
IODEX ppr swaps Mo 2 \$/DMt	AAQTN00	AAQTN03		Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	Second month after month of prevailing assessment date	Not specified	USD/dry metric ton
IODEX ppr swaps Mo 3 \$/DMt	IOPSM30	IOPSM33		Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	Third month after month of prevailing assessment date	Not specified	USD/dry metric ton
IODEX ppr swaps Next Qr \$/DMt	AAQT000	AAQT003		Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	First quarter after quarter of prevailing assessment date	Not specified	USD/dry metric ton
IODEX ppr swaps Qtr2 \$/DMt	IOPSQ20	IOPSQ23		Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	Second quarter after quarter of prevailing assessment date	Not specified	USD/dry metric ton
IODEX ppr swaps Qtr3 \$/DMt	IOPSQ30	IOPSQ33		Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	Third quarter after quarter of prevailing assessment date	Not specified	USD/dry metric ton
IODEX ppr swaps CFR Qingdao calendar year 01	IOPCY01			Basis 62%-Fe Platts Iron Ore Index specifications	Not specified	Not specified	CFR Qingdao	First year after year of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% Mo01 \$/DMt	ITSIM10	ITSIM11		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	First month after month of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% Mo02 \$/DMt	ITSIM20	ITSIM23		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	Second month after month of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% Mo03 \$/DMt	ITSIM30	ITSIM33		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	Third month after month of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% Qr01 \$/DMt	ITSIQ10	ITSIQ11		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	First quarter after quarter of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% Qr02 \$/DMt	ITSIQ20	ITSIQ23		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	Second quarter after quarter of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% Qr03 \$/DMt	ITSIQ30	ITSIQ33		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	Third quarter after quarter of prevailing assessment date	Not specified	USD/dry metric ton
SWITCH IODEX versus Steel Index 62% CalendarYear 01	ITSIY01	ITSIY11		Basis spread observed/implied from 62%-Fe IODEX minus 62%-Fe TSI index	Not specified	Not specified	CFR Qingdao	First year after year of prevailing assessment date	Not specified	USD/dry metric ton

## IRON ORE PAPER SWAPS

Platts publishes daily assessments for monthly, quarterly and next calendar year CFR North China iron ore swaps. These financial instruments are traded fixed price (e.g. \$80/mt) or in intermonth spreads. Swaps are derivatives which settle off the average value of the underlying physical benchmark price, Platts IODEX 62% Fe iron ore fines CFR China, as published on each day during the month of trade (e.g. November). Platts publishes swaps assessments for two/three months ahead, called month one (M1), second month (M2) and third month (M3). Platts also publishes assessments for the next three calendar quarterly swap. Monthly assessments will be rolled on the first day of the month. For example, during October 2009 the M1 iron ore swap will be November 2009, M2 will be December 2009, and the published quarterly swap will

be Q1 2010. On November 1 the M1 iron ore swaps will roll to December, M2 will roll to January, and the quarterly swap will still be Q1 2010.

As of March 1, 2012 Platts also publishes a corresponding spread differential for each swap, referred to in the market as a 'switch' which prices the spread differential between swaps settled on Platts IODEX and those settled on Platts' The Steel Index iron ore assessment. Platts will extend assessments down the forward curve to include further monthly, quarterly and annual swaps contracts, as and when market liquidity in these instruments develops.

**Timing:** Swaps assessments reflect a market-on-close value at 17:30hrs Singapore time. The assessments reflect the tradable level at this time. Swaps bids/offers and trades will be reported in real-time throughout the

day on Platts' electronic information service, Platts Metals Alert (PMA ) and a summary of trades published after market close in Platts Steel Markets Daily. Full calendar month swaps for the month-ahead and the subsequent month are quoted throughout the calendar month prior to rollover. Rollovers occur on the first working day of the month.

General reporting principles applicable to all derivatives markets: Platts only publishes and evaluates information from sources considered credible and creditworthy. Bids/offers of paper swaps received by Platts after published timing cut-off guidelines will be disregarded and not published.

Firm, executable bids or offers posted onto Platts Metals Alert page 700 will be taken into consideration for assessments. Assessments are

a reflection of deals and bid/offers and are subject to careful review. Information will be cross-checked to ensure data integrity. Assessments reflect the value of market on close. Illiquid markets may be assessed relative to more active benchmarks with more accurate price discovery. Transactions done after market close will be disregarded.

#### **Brief explanation of derivatives terminology:**

**Swap:** A financially-settled contract traded in the over-the-counter (OTC) market. Swaps or 'paper' are risk management tools which allow users to lock in values by transforming floating price risk to fixed or fixed to floating. Swaps are also used as a speculative tool. Swaps trade freely in an over the counter market and can trade at any time. Paper markets are very reactive and provide players with an

instant feedback of market conditions. Platts reflects the immediate changes in swaps market values as market hears on Platts Metals Alert page 700.

**Financial settlement:** Unlike physically-settled forward cargo trades, paper swaps are financially-settled derivative contracts. For example, the difference between buying an "April iron ore cargo" and an "April iron ore swap" is this: in the first case the buyer would take delivery of a cargo of the product, while in the second case the buyer would pay (or be paid) the difference between the swap price and the average of Platts' iron ore cargo assessments in April.

**Month:** A calendar monthly swap is quoted for the full month calendar month, i.e. from the first to the last business working day in the month. Then the monthly swap assessment is rolled over.

**Quarter:** Quarters are defined as calendar quarters, for example Q3 refers to July, August and September. Quarterly swap assessments roll four times a year on the first business days of January, April, July and October.

**Year:** A year is defined as a calendar year, for example 2015, i.e. from the first to the last business working day in that year.

**Time spreads:** Each market has its own timing structure, defined by the steepness of price backwardation or contango. This timing structure changes constantly, and a swaps market can develop around the correlations between prompt and forward timings. Swaps are frequently traded on a month against month basis, as well as quarter against quarter and year against year.

**FREIGHT NETBACKS**

Assessment	CODE	Mavg	Wavg	QUALITY	QUANTITY	DIMENSIONS	LOCATION	TIMING	PAYMENT TERMS	UOM
IODEX netback Australia Capesize \$/DMt	IONBA00	IONBA03		moisture 8.03	NA	NA	FOB Port Hedland	NA	NA	USD/dry metric ton
IODEX netback West India Panamax \$/DMt	IONBI00	IONBI03		moisture 8.11	NA	NA	FOB Mormugao	NA	NA	USD/dry metric ton
IODEX netback West Handymax India \$/DMt	IONBW00	IONBW03		moisture 8.11	NA	NA	FOB Mormugao	NA	NA	USD/dry metric ton
IODEX netback East India Handymax \$/DMt	IONBE00	IONBE03		moisture 8.00	NA	NA	FOB Haldia and Paradip	NA	NA	USD/dry metric ton
IODEX netback Brazil Capesize \$/DMt	IONBB00	IONBB03		moisture 9.00	NA	NA	FOB Tubarao	NA	NA	USD/dry metric ton
IODEX netback South Africa Capesize \$/DMt	IONSA00	IONSA03		moisture 3.00	NA	NA	FOB Saldanha Bay	NA	NA	USD/dry metric ton

**FREIGHT & NETBACKS**

Please see our Freight/Shipping Methodology and Specifications Guide at <http://www.platts.com/methodology-specifications/shipping>

The FOB netbacks published daily are automatically calculated using a formula that deducts the respective dry bulk freight assessments from the day's IODEX 62% Fe iron ore assessments on a CFR Qingdao basis, assuming moisture commonly seen in ores of various origins. All freight assessments and FOB netbacks are published in Platts SBB Steel Markets Daily and Platts Metals Alert PMA page MW1106.

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## REVISION HISTORY

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**May 2015:** This methodology guide was updated to include the new phosphorus differential assessment which was launched May 18, 2014,

**February 2015:** This methodology guide was updated to include further description of Platts' processes and practices in survey assessment environments.

**July 2014:** Platts revamped all Metals Methodology and Specification guides, including its Iron Ore guide, in July 2014. This revamp was completed to enhance the clarity and usefulness of all guides, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.